2010

# Front of pack daily intake labelling on Australian packaged foods: introduction and use 2007-2009

P. Williams
*University of Wollongong*, peterw@uow.edu.au

R. Duncan
*University of Wollongong*

K. de Agnoli
*University of Wollongong*, kated@uow.edu.au

A. Hull
*University of Wollongong*

A. Owers
*University of Wollongong*

*See next page for additional authors*

# Front of pack daily intake labelling on Australian packaged foods: introduction and use 2007-2009


## Abstract

This study aimed to measure the extent of use of front-of-pack daily intake (DI) labelling across food categories in Australian supermarkets, and assess the level of compliance with the Australian Food and Grocery Council (AFGC) guidelines. Surveys of six supermarkets in the Illawarra region of New South Wales were conducted twice a year in 2007, 2008 and 2009. The number of products with DI labelling increased from 58 in February 2007 to 1939 in August 2009 and appears to be growing strongly. The greatest number of products with the labelling are in the biscuits and crackers, cooking sauces, breakfast cereals, ice cream, soft drinks, processed meats, frozen foods, snack foods, juices and confectionery categories, but labelling is present in almost all categories, with the exception of milk products. Approximately 75% of products complied strictly with the AFGC guidelines, with most non-compliance being issues of minor layout differences. The DI labelling system is now widely present in the Australian market across most food categories, however further research is required to determine how useful the DI label scheme is in helping consumer choice.



## Keywords

food labelling, front of pack, nutrition claims, AFGC


## Disciplines

Arts and Humanities | Life Sciences | Medicine and Health Sciences | Social and Behavioral Sciences


## Publication Details

This article was originally published as Williams, P, Duncan, R, de Agnoli, K, Hull, A, Owers, A, and Wang, T, Introduction and use of front of pack daily intake labelling on Australian packaged foods: introduction and use 2007-2009, Food Australia, 62(12), 2010, 583-588.



## Authors

P. Williams, R. Duncan, K. de Agnoli, A. Hull, A. Owers, and T. Wang

**Title:** **Introduction and use of front of pack daily intake labelling on Australian packaged foods 2007-2009**

**Authors:** **Peter Williams**[1]
**Rhys Duncan**[2]
**Kate de Agnoli**[2]
**Alicia Hull**[2]
**Amanda Owers**[2]
**Tina Wang**[2]

**Institution**: [1] Associate Professor, Nutrition and Dietetics
Smart Foods Centre, School of Health Sciences
University of Wollongong
Wollongong NSW 2522 Australia

[2] Dietetic students
University of Wollongong

**Correspondence to:** A/Prof Peter Williams
Smart Foods Centre,
University of Wollongong
Wollongong NSW 2522 Australia

**Telephone:** +61 2 4221 4085
**FAX:** +61 2 4221 4844
**e-mail**: peter_williams@uow.edu.au

**Version:** 2 (10 August 2010)

**Word count**: 4900

**Key words**: food labelling, front of pack, nutrition claims

## Abstract

This study aimed to measure the extent of use of front-of-pack daily intake (DI) labelling across food categories in Australian supermarkets, and assess the level of compliance with the Australian Food and Grocery Council (AFGC) guidelines. Surveys of six supermarkets in the Illawarra region of New South Wales were conducted twice a year in 2007, 2008 and 2009. The number of products with DI labelling increased from 58 in February 2007 to 1939 in August 2009 and appears to be growing strongly. The greatest number of products with the labelling are in the biscuits and crackers, cooking sauces, breakfast cereals, ice cream, soft drinks, processed meats, frozen foods, snack foods, juices and confectionery categories, but labelling is present in almost all categories, with the exception of milk products. Approximately 75% of products complied strictly with the AFGC guidelines, with most non-compliance being issues of minor layout differences. The DI labelling system is now widely present in the Australian market across most food categories, however further research is required to determine how useful the DI label scheme is in helping consumer choice.

## Introduction

The provision of nutrient information on food products is one example of a population-based approach aimed at creating a supportive environment for consumer health. The principle purpose of nutrient information panels (NIPs) is to inform consumers of the nutrient composition of foods, to assist them to make nutritionally appropriate food choices. NIPs can also reduce information search costs for consumers, which should make it more likely that the information provided is actually being used (Grunert & Wills 2007).

However NIPs have faced the criticism that consumers are not using them to make food purchasing decisions and that they find them confusing and difficult to interpret or, if they do, the panels are being misinterpreted (Cowburn & Stockley 2005; Ni Mhurchu & Gorton 2007). Research conducted on behalf of Food Standards Australia New Zealand (FSANZ) concluded that while consumers have little trouble in reading and interpreting the NIP for a single product, they experience difficultly in using the NIP for product comparison, which may limit their ability to make healthy choices (Food Standards Australia New Zealand 2003).

Nutrient profiling is a means of categorizing the healthiness of a food based on its nutrient composition (Drenowski 2007; Scarborough& others 2007; Drenowski & Fulgoni 111 2008). Nutrient profiling is increasingly being looked at to help inform consumer choice and assist in regulatory decisions, and 23 different systems were identified in a recent review (Garsetti & others 2007). Several systems using nutrient profiling to develop a device displayed on the front of packaging have been developed recently:

1) In the UK there is a voluntary program setting bands for low, medium and high content of fat, saturated fat, sugars and salt, displayed on front of pack with coloured

'traffic light' devices (Food Standards Agency 2009). It has been used by a number of manufacturers and retailers in different formats, and the Food Standards Agency recently published research on the effectiveness of these schemes (Food Standards Agency 2008b).

2) The Institute of Grocery Distribution in the UK, in collaboration with government and consumer groups, developed another system that food companies can use on back-of-pack to indicate the percentage of Guideline Daily Amounts (GDAs) of nine nutrients provided by a serve of the food (Institute of Grocery Distribution 2006) and this was extended to a front-of-pack system with five nutrients in 2005 (Food and Drink Federation 2005). A similar system of 'thumbnail' values (Daily Intake Guide) has been promulgated for front of pack use by the Australian Food and Grocery Council (AFGC) (Australian Food and Grocery Council 2008) and the Confederation of Food and Drink Industries in the EU (CIAA) (Confederation of Food and Drink Industries in the EU (CIAA) 2008).

In addition to these schemes, which attempt to convey detailed nutritional profile information, there are several voluntary schemes used by industry or health organisations that aim to help consumers make 'healthy' food choices with simple systems that classify foods as better choices within a category. Examples of these schemes include the US Healthy Choice logo (ConAgra 2009), the Swedish Green Keyhole system (Larsson& others 1999; National Food Administration 2009), the Finnish Heart symbol (Kinnunen 2000), the Netherlands Nutrition Centre Tripartite classification system (Dutch Nutrition Centre 2005), the Canadian Heath Check program (The Heart and Stroke Foundation of Canada 2009) and the National Heart Foundation of Australia's Tick system (Schrapnel 1993).

There have been a number of scientific and policy reviews of these different systems (Azais-Braesco & others 2006; Drenowski 2007; Garsetti & others 2007; Tetens & others 2007; Lobstein & Davies 2009). In particular, consumer reaction to front of pack labelling has been the subject of significant recent research, but although the concept seems popular with consumers, the best format to support healthier food purchases is not yet clear (Clegg & Lawless 2008; Kelly & others 2008; van Kleef & others 2008; National Heart Foundation 2009). Research indicates that generally consumers like the idea of improved and simplified nutrition labelling, especially on the front of the pack, and that they are used as a shopping aid. Opinion is, however, divided in relation to which system the consumers themselves prefer (Grunert & Wills 2007; Fuenekes & others 2008). It has been argued that the presence of a range of different systems is likely to confuse consumers (Ni Mhurchu & Gorton 2007) and therefore there have been calls in Australia for the adoption of a single national system (Choice 2007; Australian Chronic Diseases Prevention Alliance 2009).

At present, the most widespread system in Australia is the voluntary guideline daily amounts system (DI labelling) introduced by the AFGC in 2006 (Australian Food and Grocery Council 2006). The stated aim of that system is to provide consumers with information in a uniform, easy-to-understand format to assist them to make informed choices about their food. The system has a strict set of guidelines for manufacturers to ensure that the format of labelling is common across all products, and these guidelines were updated and extended in 2007 (Australian Food and Grocery Council 2007) and 2008 (Australian Food and Grocery Council 2008). Companies who participate are required to include at a minimum the energy DI information on the front of pack, with the options to use the additional DI information for four core nutrients (fat, saturated fat, sugars and sodium), or energy and the core four with an

additional two: protein and carbohydrate. Figure 1 shows examples of the display formats (sometimes called 'thumbnails') that are permitted under the AFGC guidelines.

There has been some criticism of the scheme, with claims that a traffic light system like that used in the UK might be easier for consumers to use (Choice Magazine 2008). The AFGC has responded that consumer research demonstrates that 74% of Australian consumers are aware of the system and 66% say it is easy to understand (Australian Food and Grocery Council 2008; Palmer 2009). In 2008, the government in Australia announced a review of food labelling law and policy which will report in 2010. The review will consider front of pack nutrition labelling to assist informed consumer choice, in addition to many other food labelling policy and regulatory issues (Department of Health and Ageing 2008).

This paper presents results from a series of six-monthly audits of the uptake and use of this system on packaged foods in Australian supermarkets over the first three years since its implementation in 2006. The study was commissioned by the AFGC and carried out independently by staff of the Smart Foods Centre at the University of Wollongong. The aims were to measure the use of DI labelling across food categories, and assess the level of compliance with the AFGC guidelines.

## Methods

### *Guidelines*

The Smart Foods Centre was provided with a copy of the AFGC guidelines on the use of the DI labelling. The first two audit surveys in February and August 2007 reviewed compliance against the first set of guidelines issued in October 2006 (Australian Food and Grocery Council 2006). These guidelines were updated in October 2007 and August 2008 and those revised guidelines were used as the standards of comparison in the later surveys (Australian Food and Grocery Council 2007; Australian Food and Grocery Council 2008).

### *Data collection*

The supermarket surveys were conducted over a two week period during February and August in 2007, 2008 and 2009 in the same six supermarkets in the Illawarra region of NSW. The stores were chosen to include samples of the major supermarket chains: Wollongong Woolworths, Figtree Coles and Dapto Independent Grocers of Australia (IGA), Shellharbour Aldi, Bi-Lo Thirroul, and Woonona Franklins. Verbal permission to conduct each audit was sought from the customer service desk upon entry to each store.

The front packaging of all food products was examined for the use of the DI labelling, with the following details being recorded: brand, product name and whether energy, energy plus four nutrients (fat, saturated fat, sugar and sodium only) or all of the seven mandatory elements of the nutrition information panel were displayed. Additionally, the inclusion of any additional nutrients as a component of the DI labelling was recorded, as well as the level of compliance with the AFGC general usage. Various package sizes of a single brand item were

not recorded separately; any one stock keeping unit (SKU) carrying the labelling was reported as a positive finding for the product.

***Data analysis***

Foods were categorised as described in previous labelling research (Williams& others 2003) with the following additional categories: savoury snacks, frozen foods, frozen meals canned vegetables and confectionery, as these products did not easily fit into the previous food grouping system. Data were entered into a Microsoft Excel spreadsheets with the following analyses carried out for each product category:

- Number of products carrying the DI labelling values
- Proportion of products displaying the energy only, for energy plus the additional six, four, three, two or one other nutrients.
- Number of products displaying additional nutrients outside the six mandatory nutrients of the nutrition information panel (NIP)

A comments column was also utilised to assist in the qualitative analysis of level of brand compliance to AFGC general usage guidelines.

Approval to conduct these studies was granted by the University of Wollongong Human Research Ethics Committee.

## Results

### *Presence of DI labelling*

Table 1 provides details of the number of items displaying the DI thumbnail by food category. The trends over the three years from February 2007 to August 2009 are shown graphically in Figure 2. At the time of the first survey, four months after the program launch, only two companies – Kellogg and Don – were using the DI labelling on a total of 58 products, and these were restricted to the categories of breakfast cereals, nutritious snacks and processed meats. Nestle had a similar graphic presenting some nutrient information on some dairy products, but in a manner that differed to the AFGC DI labelling style guide.

Over the 30 months from the first to the sixth survey, there was a rapid growth in the presence of the DI labelling. It was found in virtually all food categories by August 2008 and by August 2009 a total of 177 brands were displaying the DI labelling. There were a number of brands, including 70 Aldi brands (395 products) that displayed a DI label with the same general information, but of a modified style design. Including these design-modified DI labels there was a total of 1939 products identified in August 2009. 1161 products (60%) displayed the energy only label and 778 (40%) displayed energy plus additional nutrients. Of the products displaying energy and other nutrients, 33% displayed energy plus the six other mandatory NIP nutrients, and 67% displayed energy plus four mandatory NIP nutrients (fat, saturated fat, sugar and sodium).

There is a greater presence of DI labelling in some categories than others. The greatest number of products with the labelling are found in biscuits and crackers, cooking sauces, breakfast cereals, ice cream, soft drinks, processed meats, frozen foods, snack foods and

juices and confectionery, with over 90 labelled products in each of these categories. On soft drinks, sports drinks, cordials, salad dressings and cheese, most (> 90%) of the labels use the minimum energy label only. In the categories breakfast cereals, drink bases and nutritious snacks most foods display the values for energy and at least four other major nutrients.

***Compliance with AFGC guidelines***

A significant proportion of products failed to comply strictly with the AFGC general usage guidelines. In August 2009 1156 products (59.6%) used DI labelling that strictly met the guidelines for format, design, and content. Eight different types of non-compliance were identified across 38 brands (46% of participating brands). The types of non-compliance found included:

- Modified style design (eg, shape or colour)
- Variations in the number of allowed additional nutrient thumbnails (eg. displaying energy plus protein and sugar; or displaying energy plus vitamin C)
- Label difficult to read (eg due to colour with insufficient contrast to background)
- Additional nutrients listed in between the six mandatory nutrients and not after the DI label, as required by the guidelines
- DI label not located on the front of package
- Decimal places used in the DI label
- Nutrient not listed in the NIP despite being used on front of pack DI label
- Energy values given in calories and not kilojoules.

Table 2 shows the types of non compliance in August 2009, with the number of products for each type and the percentage of total products. 783 products were found to be non-compliant, but there were 856 individual compliance issues, since some products were non-compliant for

more than one reason. Modified style design represented the largest compliance issue (50.5%), mainly due to the large number of Aldi brands represented displaying DI thumbnails of their own design.

There was an overall decrease in the percentage compliance between the two surveys in 2009 audit: from 66% in February to 59.6% in August. However, if the 395 Aldi products are excluded from the analysis (since they use a quite different format of labelling), the percentage compliance actually improved in the most recent survey to 74.9%.

***Additional nutrients***

Manufacturers are free to provide more information on additional nutrients outside of the energy plus six standard nutrients, provided they use the agreed thumbnail presentation style, and that information is available under the Food Standards Code for the recommended daily intake of that nutrient (Australian Food and Grocery Council 2007).

The August 2009 survey identified 265 (13.6%) of the 1939 products with DI thumbnails displaying additional nutrient thumbnails across nine food categories: breakfast cereals, juices, drink bases, milk and substitutes, processed meats, canned vegetables and legumes, nutritious snacks, ice creams and bread (Table 2). The most common additional nutrient was dietary fibre, which was displayed on 191 (9.9%) of products.

## Discussion

The main limitation of this study is the restricted sample of supermarkets used for data collection. The stores surveyed are unlikely to have contained all Australian food products displaying DI labels, especially those marketed solely outside of New South Wales. The inclusion of more supermarket chains and store locations could have made the data more complete, but would have been logistically prohibitive. Secondly, the total number of products on shelves was not recorded, so it is not possible to report the prevalence rates of the DI labelling. It has been estimated elsewhere that there are approximately 19,500 different food products available in a typical Australian supermarket (National Heart Foundation 2010), which would mean that about 10% of products carried the DI labelling in late 2009. The results can be used to see which food categories have had the greatest uptake of the system, to make an estimate of rate of growth in the use of the labelling, and make some assessments of compliance issues.

There has been a significant and rapid increase in the use of front of pack DI labelling since the system was introduced in 2006 and the trend appears to be continuing. The number of products with DI labelling increased by 66% in the six months between the last two surveys in 2009. Since February 2009 the major supermarkets (Woolworths, Coles, IGA and Franklins) have also been displaying DI labelling on their home branded products, which exposes consumers to an even greater variety of products with the DI label. It is noteworthy that the system is now widely used across most categories of foods, not only core foods with high nutrient density but also more discretionary snack foods and soft drinks, to help consumers interpret how these foods contribute to their daily nutrition needs. The one notable exception is the absence of the labelling on most plain dairy foods (eg milk), although it was found widely on yoghurt and ice creams.

The increasing number of Aldi products on the market displaying DI labels with their own modified style design is concerning, as it undermines the goal of a uniform labelling guide. Their labelling is very similar in the information provided to that in the AFGC DI label and it may be equally valuable to assist consumers making food choices. However, recent research on traffic light systems in the UK has concluded that multiple versions of the labelling system is undesirable since it can foster consumer confusion and the Food Standards Authority there has called for a more consistent approach to front of pack labelling (Food Standards Agency 2009).

Many major food companies are listing dietary fibre as an additional non-mandatory nutrient in the DI label. Most commonly this nutrient is placed with the other macronutrients (next to carbohydrate), rather than after the six mandatory nutrients as required by the guidelines, and this is a source of significant technical non-compliance. Many of the other factors of non-compliance are similarly of minor concern; probably the issue of difficult legibility (about 8% of products) is the only major factor that might substantially affect consumer use of the DI label. A similar level of non-compliance was found by FSANZ research in 2006 compliance with the format of the mandatory NIP on food labels. That study reported levels of non-compliance of 20%, but 70% of those were for minor technical formatting errors, so only 6% of overall products had significant problems of compliance (Food Standards Australia New Zealand 2008).

This research did not attempt to measure consumer use or understanding of the system, nor to examine other communications from food companies about the use of the system. The AFGC has published results of two national online surveys of over 1200 adults conducted in

December 2007 and June 2008 (Australian Food and Grocery Council 2008). In the later of these two surveys, 69% of grocery buyers agreed that the DI label was easy to read and understand and 58% agreed that it provided the type of information needed to help decide whether to buy a product. The AFGC as well as several companies have also established website presences that provide more detailed explanations of how to interpret DI labelling, some with additional information on how to calculate personalised intake requirements (Australian Food and Grocery Council 2008; Kellogg Australia 2009; Nestle 2009; Tip Top 2009). It is also likely that the increased presence of the front of pack labelling has driven more companies to include voluntary daily intake information in the NIP, which is not a mandatory element at present.

It will be important to continue to monitor the implementation of the system, through audits such as those conducted as part of this study, to monitor the extent of its presence in the market and whether a standard format is being used within this voluntary system.

## Conclusions

The number of products with DI labels on products in Australian supermarkets is growing rapidly and in 2009 the label was found on the front of over 1900 products across almost all major food categories. However, compliance still remains an issue, indicating a need for the AFGC to act in order to improve the uniformity of DI label formats. Further research is needed to determine the best labelling approaches to aid Australian consumers in selecting foods to construct healthy diets.

## Acknowledgements

This research was supported by a grant from the Australian Food and Grocery Council.

**Figure 1 Optional formats of Daily Intake Guide labelling scheme**

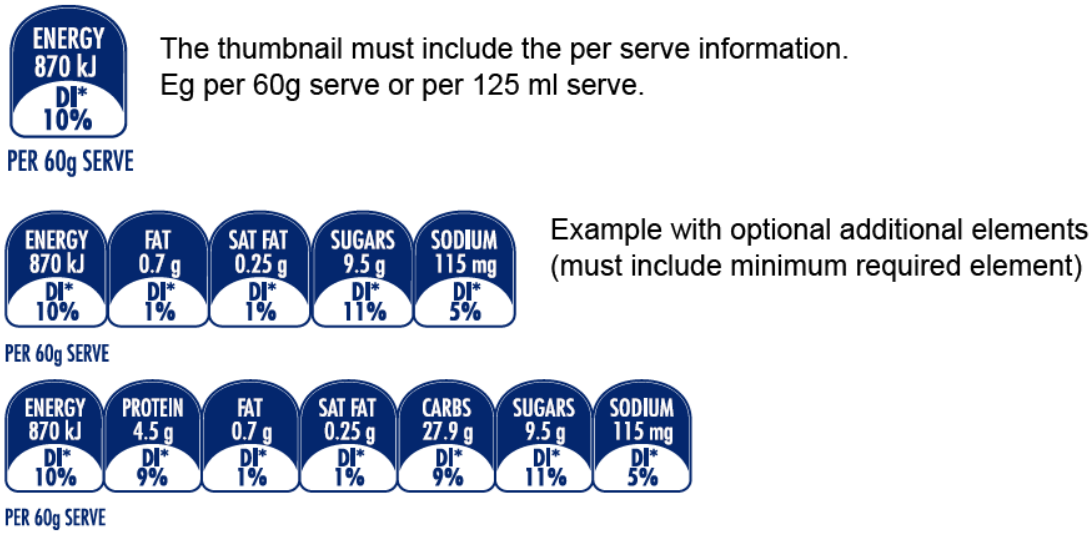
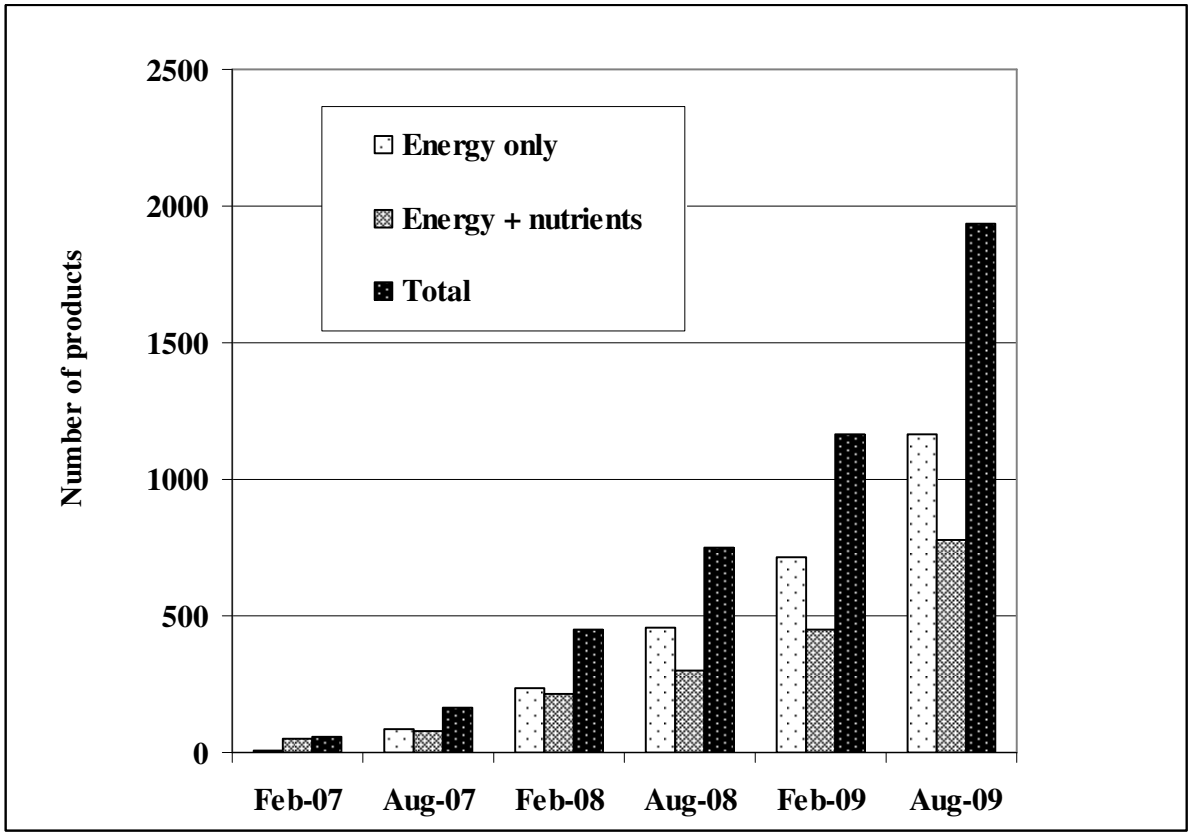


**Figure 2. Trends in the number of food products with DI labelling 2007-2009**



## Table 1: Number of food products displaying the DI labelling by category from 2007-2009

| Food Category | Energy label only | | | | | | Energy Plus Nutrients | | | | | | Total Products Displaying %DI Labelling | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Date *** | **F 07** | **A 07** | **F 08** | **A 08** | **F 09** | **A 09** | **F 07** | **A 07** | **F 08** | **A 08** | **F 09** | **A 09** | **F 07** | **A 07** | **F 08** | **A 08** | **F 09** | **A 09** |
| **Biscuits and Crackers** | 0 | 14 | 17 | 39 | 56 | **104** | 0 | 0 | 0 | 0 | 17 | **83** | 0 | 14 | 17 | 39 | 73 | **187** |
| **Bread** | 0 | 0 | 1 | 19 | 6 | **15** | 0 | 2 | 0 | 0 | 18 | **49** | 0 | 3 | 19 | 15 | 24 | **64** |
| **Breakfast Cereals** | 0 | | 0 | 0 | 0 | **0** | 32 | 42 | 55 | 72 | 98 | **125** | 32 | 42 | 55 | 72 | 98 | **125** |
| **Cooking Sauces** | 0 | 0 | 13 | 21 | 10 | **46** | 0 | 11 | 37 | 29 | 52 | **106** | 0 | 11 | 50 | 50 | 62 | **152** |
| **Dairy** | 0 | 0 | 12 | 0 | 0 | **0** | 0 | 0 | 4 | 0 | 0 | **0** | 0 | 0 | 16 | 0 | 0 | **0** |
| **Cheese** | 0 | 0 | 0 | 23 | 25 | **37** | 0 | 0 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | 24 | 25 | **38** |
| **Milk and Substitutes** | 0 | 0 | 0 | 0 | 4 | **25** | 0 | 0 | 0 | 3 | 5 | **11** | 0 | 0 | 0 | 3 | 9 | **36** |
| **Yogurt** | 0 | 0 | 0 | 23 | 43 | **76** | 0 | 0 | 0 | 6 | 8 | **10** | 0 | 0 | 0 | 29 | 51 | **86** |
| **Drink Bases** | 0 | 0 | 0 | 0 | 7 | **0** | 0 | 0 | 0 | 7 | 3 | **13** | 0 | 0 | 0 | 7 | 10 | **13** |
| **Drinks Other** | 0 | 22 | 63 | 0 | 0 | **0** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 22 | 63 | 0 | 0 | **0** |
| **Cordials and Water Ices** | 0 | 0 | 0 | 12 | 14 | **26** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | 12 | 14 | **26** |
| **Soft Drinks** | 0 | 0 | 0 | 71 | 103 | **122** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | 71 | 103 | **122** |
| **Sports Drinks** | 0 | 0 | 0 | 8 | 24 | **31** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | 8 | 24 | **31** |
| **Frozen Foods** | 0 | 0 | 6 | 38 | 35 | **67** | 0 | 0 | 32 | 43 | 20 | **44** | 0 | 0 | 38 | 81 | 55 | **111** |
| **Frozen Meals** | 0 | 0 | 0 | 0 | 29 | **56** | 0 | 0 | 0 | 0 | 25 | **17** | 0 | 0 | 0 | 0 | 54 | **73** |
| **Ice Cream** | 0 | 0 | 44 | 57 | 88 | **108** | 0 | 0 | 1 | 0 | 7 | **17** | 0 | 0 | 45 | 57 | 95 | **125** |
| **Juices** | 0 | 18 | 0 | 2 | 27 | **89** | 0 | 0 | 31 | 40 | 48 | **6** | 0 | 18 | 31 | 42 | 75 | **95** |
| **Nutritious Snacks** | 0 | 0 | 0 | 3 | 0 | **5** | 18 | 32 | 34 | 53 | 53 | **94** | 18 | 32 | 34 | 56 | 53 | **99** |
| **Processed Meats** | 8 | 8 | 8 | 25 | 71 | **76** | 0 | 0 | 0 | 0 | 2 | **44** | 8 | 8 | 8 | 25 | 73 | **120** |
| **Ready Foods** | 0 | 6 | 15 | 34 | 33 | **50** | 0 | 0 | 21 | 16 | 19 | **42** | 0 | 6 | 36 | 50 | 52 | **92** |
| **Soup Mixes** | 0 | 0 | 0 | 14 | 16 | **64** | 0 | 0 | 0 | 29 | 36 | **14** | 0 | 0 | 0 | 43 | 52 | **78** |
| **Dressings** | 0 | 6 | 17 | 15 | 19 | **28** | 0 | 0 | 0 | 0 | 0 | **1** | 0 | 6 | 17 | 15 | 19 | **29** |
| **Savoury Snacks** | 0 | 0 | 0 | 32 | 45 | **57** | 0 | 0 | 0 | 0 | 8 | **8** | 0 | 0 | 0 | 32 | 53 | **65** |
| **Spreads &Dips** | 0 | 13 | 19 | 22 | 28 | **31** | 0 | 0 | 0 | 0 | 0 | **8** | 0 | 13 | 19 | 22 | 28 | **39** |
| **Confectionery** | 0 | 0 | 0 | 0 | 32 | **41** | 0 | 0 | 0 | 0 | 5 | **51** | 0 | 0 | 0 | 0 | 37 | **92** |
| **Canned Vegetables and Legumes** | 0 | 0 | 0 | 0 | 0 | **7** | 0 | 0 | 0 | 0 | 28 | **34** | 0 | 0 | 0 | 0 | 28 | **41** |
| **TOTAL** | 8 | 88 | 233 | 454 | 715 | **1161** | 50 | 78 | 215 | 299 | 452 | **778** | 58 | 166 | 448 | 753 | 1167 | **1939** |

* F = February; A = August.

**Table 2. Types of non-compliance with AFGC guidelines**

| **Type of non-compliance** | **Number of compliance issues** | **Percent of total** |
|---|---|---|
| Modified style design | 432 | 50.5 |
| Variations in the number of allowed additional nutrient thumbnails | 203 | 23.6 |
| Thumbnail difficult to read | 71 | 8.2 |
| Additional nutrients listed in between the six mandatory nutrients and not after | 66 | 7.7 |
| DI thumbnail not on the front of package | 50 | 5.8 |
| Decimal places in the DI label | 16 | 1.9 |
| Nutrient not listed in the NIP | 15 | 1.8 |
| Energy in calories and not kilojoules | 3 | 0.5 |
| **Total** | 856 | 100 |

**Table 3. Number of products in August 2009 with additional nutrients in the DI labelling**

| Food category | Number of products | Additional nutrients |
|---|---|---|
| Breakfast Cereals | 107 | Fibre, vitamins B1, B2, B3, B6, C; folate, iron, calcium, zinc, magnesium. |
| Nutritious Snacks | 51 | Fibre |
| Processed Meats | 1 | Vitamin B1, iron, calcium |
| Milk and Substitutes | 13 | Calcium, vitamin D |
| Canned Vegetables | 23 | Fibre, vitamin C |
| Juices | 55 | Vitamins C, E, A |
| Ice Creams | 5 | Calcium |
| Savoury Snacks | 3 | Fibre |
| Bread | 7 | Fibre, vitamins B1, B2, B3, B6, E; folate, iron, calcium, zinc |
| **Total** | 265 | |

## References


Australian Chronic Diseases Prevention Alliance. 2009. Front of pack labelling: an agreed public health position. Downloaded from: from http://www.heartfoundation.org.au/SiteCollectionDocuments/FOPL%20ACDPA%20Consensus%20Statement%202009.pdf on 15 February 2010.

Australian Food and Grocery Council 2006. Australian Food and Grocery Council General Usage Guidelines % Daily Intake. AFGC, Canberra.

Australian Food and Grocery Council 2007. Daily Intake Guide Labelling Scheme October 2007. AFGC, Canberra.

Australian Food and Grocery Council. 2008. Daily intake guide. Downloaded from: from http://www.mydailyintake.net/ on 15 February 2010.

Australian Food and Grocery Council 2008. Daily Intake Guide Labelling Scheme August 2008. AFGC, Canberra.

Australian Food and Grocery Council 2008. An insight into Australian consumers' use and understanding of the Daily Intake Guide. AFGC, Canberra.

Azais-Braesco, V & others. 2006. Nutrient profiling: comparison and critical analysis of existing systems. Pub Health Nutr 9: 613-622.

Choice. 2007. CHOICE principles for a simplified nutrition labelling systems. Downloaded from: from http://www.choice.com.au/~/media/Files/Consumer%20Action/Food/Traffic%20light%20labelling/f133760.ashx on 15 February 2010.

Choice Magazine. 2008. Traffic light labelling needs green light. Downloaded from: from http://www.choice.com.au/Reviews-and-Tests/Food-and-Health/Labelling-and-advertising/Nutrional-labelling/Traffic-light-labelling/Page/Traffic%20light%20labelling.aspx on 15 February 2010.

Clegg, S & Lawless, S. 2008. Comprehension and use of UK nutrition signpost labelling schemes. Interim report on Quantitative Phase. Downloaded from: from http://www.food.gov.uk/multimedia/pdfs/quantannexa.pdf on 15 February 2010.

ConAgra. 2009. Healthy Choice. Downloaded from: from http://www.healthychoice.com/home/home.jsp on 15 February 2010.

Confederation of Food and Drink Industries in the EU (CIAA). 2008. GDAs - The facts. Your choice. Downloaded from: from http://gda.ciaa.eu/asp2/index.asp on 15 February 2010.

Cowburn, G. & Stockley, L. 2005. Consumer understanding and use of nutrition labelling: as systematic review. Pub Health Nutr 8(1): 21-28.

Department of Health and Ageing. 2008. Review of food labelling law and policy. Downloaded from: from http://www.health.gov.au/internet/main/publishing.nsf/Content/review-food-labelling-law-&-policy on 15 February 2010.

Drenowski, A. 2007. What's next for nutrition labelling and health claims? Nutr Today 42: 206-214.

Drenowski, A. & Fulgoni 111, V. 2008. Nutrient profiling of foods: creating a nutrient-rich food index. Nutr Rev 66: 23-39.

Dutch Nutrition Centre. 2005. Criteria for the nutritional evaluation of foods: the Netherlands tripartite classification model for foods. Downloaded from: from http://www.voedingscentrum.nl/resources2008/Criteriaengelssite.pdf on 15 February 2010.

Food and Drink Federation. 2005. GDAs explained. Downloaded from: from http://www.gdalabel.org.uk/gda/explained.aspx on 22 February 2010.

Food Standards Agency. 2008. Signpost labelling research. Downloaded from: from http://www.food.gov.uk/foodlabelling/researchandreports/ on 15 February 2010.

Food Standards Agency. 2009. Signposting. Downloaded from: from http://www.food.gov.uk/foodlabelling/signposting/ on 15 February 2010.

Food Standards Australia New Zealand. 2003. Food Labelling Issues: Quantitative Research with Consumers. Evaluation Report Series No 4. FSANZ, Canberra.

Food Standards Australia New Zealand 2008. Ongoing food label monitoring survey in Australia and New Zealand. Report on the assessment of 2006 labels for key mandatory labelling elements for consistency against labelling provisions. Evaluation Report Series No. 18. (available on line at http://www.foodstandards.gov.au/educationalmaterial/publications/evaluationreportseries/ongoingfoodlabelmoni4145.cfm). FSANZ, Canberra.

Fuenekes, G & others 2008. Front-of-pack nutrition labelling: testing effectiveness of different nutrition labelling formats front-of-pack in four European countries. Appetite 50: 57-70.

Garsetti, M. & others. 2007. Nutrient profiling schemes: overview and comparative analysis. Eur J Nutr 46 (Suppl 2): 15-28.

Grunert, K & Wills, J. 2007. A review of European research on consumer response to nutrition information on food labels. J Pub Health 15(5): 385-399.

Institute of Grocery Distribution. 2006. Guideline Daily Amounts. Downloaded from: from http://www.igd.com/index.asp?id=1&fid=5&sid=42&tid=62 on 14 February 2010.

Kellogg Australia. 2009. DI Calculator. Downloaded from: from http://www.kelloggs.com.au/Home/Nutrition/DICalculator/tabid/104/Default.aspx on 15 February 2010.

Kelly, B. & others. 2008. Front-of-pack Food Labelling: Traffic Light Study Gets the Green Light. Downloaded from: from http://www.cancercouncil.com.au/nutrition/foodlabellingreport on 15 February 2010.

Kinnunen, T. 2000. The Heart Symbol: a new food labelling system in Finland. Nutr Bull 25: 335-339.

Larsson, I & others. 1999. The 'Green Keyhole' revisited: nutritional knowledge may influence food selection. Eur J Clin Nutr 52: 776-780.

Lobstein, T & Davies, S. 2009. Defining and labeling 'healthy' and 'unhealthy' food. Pub Health Nutr 12: 331-340.

National Food Administration. 2009. The Keyhole Symbol. Downloaded from: from http://www.slv.se/en-gb/Group1/Food-and-Nutrition/Keyhole-symbol/ on 15 February 2010.

National Heart Foundation. 2009. Australians and front of pack labelling. Downloaded from: http://www.heartfoundation.org.au/Professional_Information/Food_Labelling/Pages/default.aspx on 15 February 2010.

National Heart Foundation. 2010 Consumer Behaviour Change. Downloaded from: http://www.heartfoundation.org.au/sites/tick/Health_Professionals/TickPublicHealthImpact/Pages/ConsumerBehaviourChange.aspx on 10 August 2010.

Nestle. 2009. Know you food with percentage daily intake. Downloaded from: from http://www.nestle.com.au/Nutrition/DI/KNOW+YOUR+FOOD+WITH+PERCENTAGE+DAILY+INTAKE.htm on 15 February 2010.

Ni Mhurchu, C & Gorton, D. 2007. Nutrition labels and claims in New Zealand and Australia: a review of use and understanding. Aust NZ J Pub Health 31(2): 105-112.

Palmer, D. 2009. Daily intake guide criticism "misleading": AFGC. Downloaded from: from http://www.ausfoodnews.com.au/2009/04/29/daily-intake-guide-criticism-misleading-afgc.html on 15 February 2010.

Scarborough, P & others. 2007. Developing nutrient profile models: a systematic approach. Pub Health Nutr 10: 330-336.

Schrapnel, W. 1993. The National Heart Foundation 'Pick the Tick' program: nutrition labelling and supermarket promotions to encourage healthy food choices. Health Prom J Aust 3(2): 36-38.

Tetens, I & others. 2007. Nutritional characterisation of foods: Science-based approach to nutrient profiling. Summary report of an ILSI Europe workshop held in April 2006. Eur J Nutr 46 (Suppl 2): 4-14.

The Heart and Stroke Foundation of Canada. 2009. Health Check. Downloaded from: from http://www.healthcheck.org/index.php?lang= on 15 February 2010.

Tip Top. 2009. How to read a food label. Downloaded from: from http://www.tiptop.com.au/default.asp?page=/nutrition/food+labelling on 15 January 2010.

van Kleef, E & others. 2008. Consumer preferences for front-of-pack calories labelling. Pub Health Nutr 11: 203-213.

Williams, P & others. 2003. Nutrition and related claims on packaged Australian foods; implications for regulation. Asia Pac J Clin Nutr 12(2): 138-150.